



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
2003/01200 (Smith Creek)  
2003/01356 (Gist Road)

December 19, 2003

Mr. Lawrence C. Evans  
Portland District Corps of Engineers  
CENWP-OP-GP (Ms. Karla Ellis)  
P.O. Box 2946  
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat Consultation on the Smith Creek Fish Passage Project and the Gist Road Fish Passage Improvement Project, Smith Creek, Nestucca Basin, Tillamook County, Oregon (Corps Nos. 200300270 and 200300304)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the issuance of Department of the Army permits to the Tillamook Estuary Partnership (TEP) for two fish passage restoration projects in the Smith Creek Basin, Tillamook County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Oregon Coast coho salmon (*Oncorhynchus kisutch*). As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to avoid or minimize the effects of incidental take associated with these actions. This document also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations (50 CFR 600).

Please direct any questions regarding this letter to Pat Oman of my staff in the Oregon State Habitat Office at 503.231.2313.

Sincerely,

*Michael R. Couse*  
for

D. Robert Lohn  
Regional Administrator



cc: Derek Sowers, Tillamook Estuary Partnership  
Kelly Doerksen, Confederated Tribes of the Grand Ronde

# Endangered Species Act - Section 7 Consultation Biological Opinion

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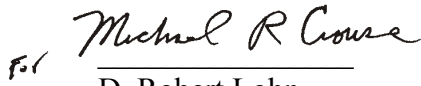
## Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Smith Creek Fish Passage Project and the Gist Road Fish Passage Improvement Project,  
Smith Creek, Nestucca Basin, Tillamook County, Oregon  
(Corps No. 200300270 and 200300304)

Agency: U.S. Army Corps of Engineers

Consultation  
Conducted By: NOAA's National Marine Fisheries Service,  
Northwest Region

Date Issued: December 19, 2003

Issued by:   
D. Robert Lohn  
Regional Administrator

Refer to: 2003/01200 (Smith Creek)  
2003/01356 (Gist Road)

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## **1. INTRODUCTION**

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1544), as amended, establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with U.S. Fish and Wildlife Service and NOAA's National Marine Fisheries Service (NOAA Fisheries), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitats. This biological opinion (Opinion) is the product of an interagency consultation pursuant to section 7(a)(2) of the ESA and implementing regulations found at 50 CFR 402.

The analysis also fulfills the essential fish habitat (EFH) requirements under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).

The proposed action is issuance of permits to the Tillamook Estuary Partnership (TEP) by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act to replace two culverts on Smith Creek, a tributary to the Nestucca River. The administrative record for this consultation is on file at the Oregon State Habitat Office of NOAA Fisheries.

### **1.1 Background and Consultation History**

On September 15, 2003, NOAA Fisheries received a letter requesting informal consultation pursuant to section 7(a)(2) of the ESA and EFH consultation pursuant to section 305(b)(2) of the MSA for issuance of Clean Water Act section 404 permits for a project to restore fish passage on a farm (Gleason property) in the Smith Creek watershed (Corps No. 200300304) (NOAA Fisheries No. 2003/01200). NOAA Fisheries reviewed the material included with the consultation request, and responded to the Corps with a letter of nonconcurrence on October 30, 2003, indicating that NOAA Fisheries did not concur with the "not likely to adversely affect" determination and that the consultation could not be completed until additional information was provided.

On October 27, 2003, NOAA Fisheries received a letter from the Corps requesting consultation pursuant to section 7(a)(2) of the ESA and EFH consultation pursuant to section 305(b)(2) of the MSA for issuance of Clean Water Act section 404 permits for the reconstruction of a culvert on Gist Road (Corps No. 200300270) (NOAA Fisheries No. 2003/01356). This culvert replacement, to be carried out by the TEP, is less than half a mile upstream of the Gleason property culvert (see Figure 1). In the letter, the Corps determined that the proposed action was "not likely to adversely affect" Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*).

On November 20, 2003, NOAA Fisheries received a revised biological assessment (BA) from the project applicant providing additional information on the Gleason Road culvert replacement, as requested in the October 30, 2003 letter from NOAA Fisheries to the Corps. On November 26, 2003, NOAA Fisheries hydrological engineers and biologists met with the applicant from TEP, the Natural Resources Conservation Service representative, and the Corps representative to review design information and probable effects of construction of the Gist Road and the Gleason culverts. The Corps agreed that both culverts could be addressed as one project, and that both were “likely to adversely affect” OC coho salmon. During this meeting, the Corps and the applicant provided additional information for the Gist Road culvert replacement. A decision to combine both projects into one formal consultation was made by NOAA Fisheries, the Corps representative, Karla Ellis, and project applicant Derek Sowers (representing the Tillamook Estuary Partnership). This biological opinion addresses the effects of construction of both culverts.

OC coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 42587), and protective regulations were issued on July 10, 2000 (65 FR 42422).

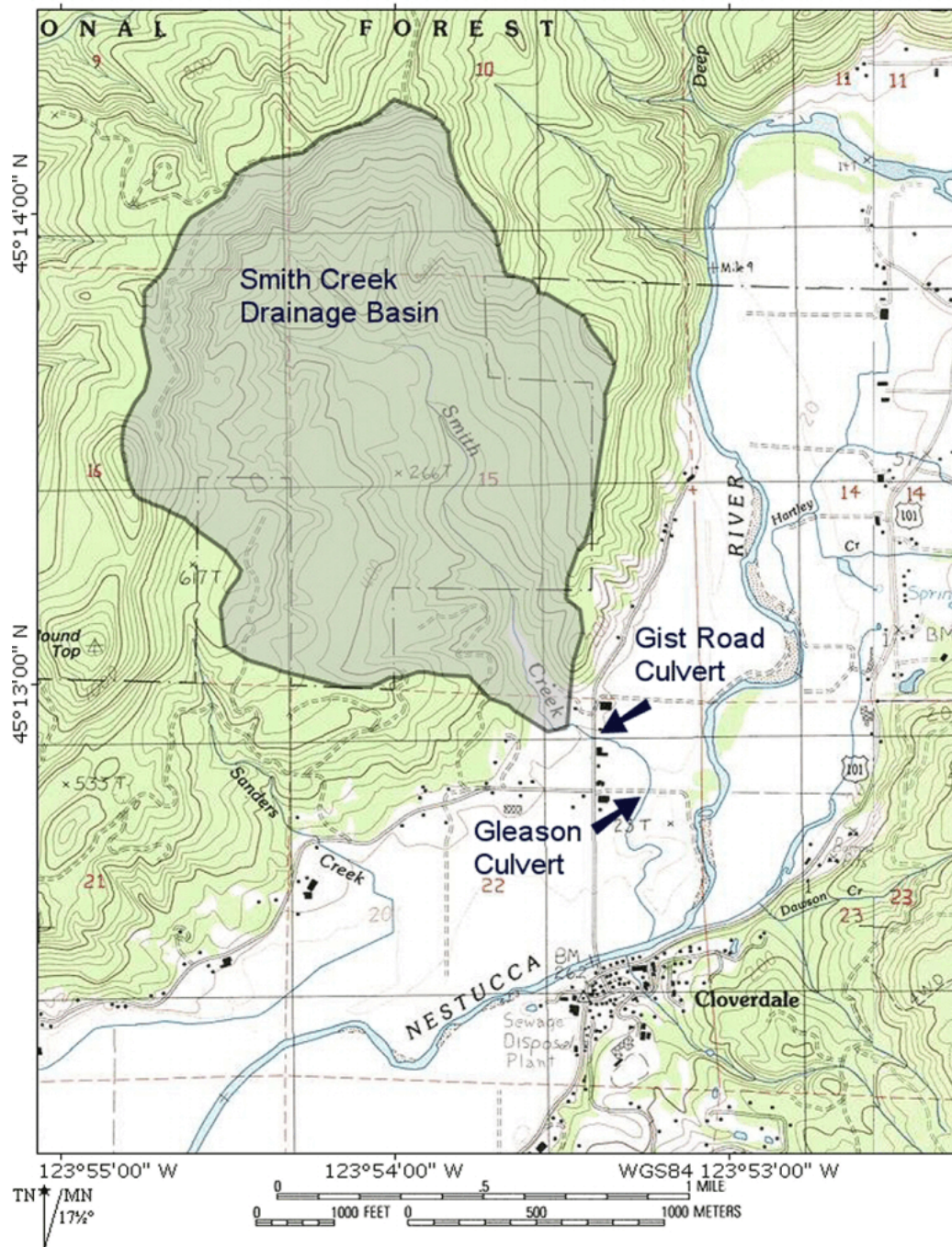
## **1.2 Proposed Action**

The proposed action is issuance of permits to the TEP by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act to reconstruct two culverts that do not currently allow for year-round fish migration.

In the past, rechannelization of Smith Creek in the 1970s through the Nestucca River floodplain resulted in channel headcutting near the Gist Road culvert. This has resulted in a 3.5-foot drop at the base of that culvert. At the Gleason property culvert, there are two, 2-foot diameter pipes that are blocked with debris. As a result, water now flows across a cow pasture, before rejoining the channel downstream and ultimately flowing into the Nestucca River (see Figure 1, topographic map of the project area).

The TEP proposes to remove both existing culverts and replace them with culverts designed to allow for upstream (adult) and downstream (juvenile) fish passage during those times when fish would be migrating. The TEP proposes to use a small to medium-sized excavator when operating within the creek channel, place excavated materials on the banks of the creek, and place the new culverts with heavy equipment. At the Gist Road site (the upstream culvert) a series of channel-spanning weirs will also be constructed to improve flows and create a series of pools.

**Figure 1.** Location of Gist Road and Gleason Property Culverts (Smith Creek Restoration)



Both culverts will be constructed of corrugated pipe arch culverts with 8-foot widths that match the average stream width in the project area. They will be countersunk into the streambed to create simulated streambed conditions. Above and below Gist Road, a series of rock weirs will provide streambed grade control, creating a gentler slope and slower water flows. These will be low-profile weirs varying in length from 24 feet to 50 feet, and in width from 5 feet to 12 feet. Less than 300 cubic yards of rock and gravel will be placed below the ordinary high water line to construct the weirs and culvert.

Excavated fill that is appropriate for native stream materials will be stockpiled for use in the culvert. During in-water work, the creek flow will be diverted around the area to isolate construction activities from the active flowing channel.

After the construction phase is complete, riparian areas within the project area will be mechanically cleared of Himalayan blackberry and planted with native grasses and willow.

Project monitoring includes the annual standard survey by ODFW to evaluate fish presence and the efficacy of the culverts for allowing fish passage. The TEP will evaluate the bedload transport features and the success of riparian plantings.

### **1.3 Conservation Measures**

Conservation measures in the following categories are proposed by the TEP: (1) Timing of in-water work, (2) fish passage, (3) pollution and erosion control, (4) pre-construction activity, and (5) heavy equipment use. NOAA Fisheries regards the conservation measures included in the BA that accompanied the consultation request as intended to minimize adverse effects to OC coho salmon and their habitats, and considers them to be part of the proposed action.

### **1.4 Description of the Action Area**

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area (project area) involved in the proposed action (50 CFR 402.02). For this consultation, NOAA Fisheries defines the action area as all riparian and riverine habitats accessible to OC coho salmon from 300 feet upstream of the Gist Road culvert, to 300 feet downstream of the Gleason property culvert, including the 100-year floodplain. See Figure 1 for a topographic view of the culvert locations.

## **2. ENDANGERED SPECIES ACT**

### **2.1 Biological Opinion**

This Opinion considers the potential effects of the proposed actions on OC coho salmon, which occur in the action area.



### 2.1.1 Biological Information

Estimated escapement of coho salmon in coastal Oregon was about 1.4 million fish in the early 1900s, with harvest of nearly 400,000 fish (Weitkamp *et al.* 1995). Abundance of wild OC coho salmon declined during the period from about 1965 to 1975 (Nickelson *et al.* 1992).

Lichatowich (1989) concluded that production potential (based on stock recruit models) for OC coho salmon in coastal Oregon rivers was only about 800,000 fish, and associated this decline with a reduction in habitat capacity of nearly 50%. Recent estimates of wild spawner abundance in this evolutionarily significant unit (ESU) has ranged from 16,500 adults in 1990, to nearly 60,000 adults in 1996, and 238,700 adult coho in 2002 (ODFW 2003). Estimated spawning populations for naturally-produced coho salmon in the Nestucca River has fluctuated recently, from a low of 169 in 1998, to a high of 3,940 in 2001 (Jacobs *et al.* 2002), but has overall exhibited an upward trend. These results are summarized in Table 1.

**Table 1.** Estimated Spawning Populations for Naturally-Produced Coho Salmon in the Nestucca River Watershed (Jacobs *et al.* 2002).

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Estimated wild coho spawners	189	728	684	401	313	1811	519	271	169	2201	1171	3940

Within the project area, coho adults migrate from the first of November to the middle of January. Juveniles, if any, would be present year-round (Susac, personal communication to Oman, November 19, 2003).

Stream surveys of this stretch of Smith Creek, done by ODFW from October 1999, to January 2001, found no adult or juvenile coho salmon; one live chinook salmon was observed in December, 1999. However, as discussed in the BA, a rapid bio-assessment done by a consultant in 2002, found two adult coho in the scour pool below the Gist Road culvert. In 2003, 14 juvenile coho were reported in Smith Creek, also during a rapid bio-assessment. At present, the Gleason property culvert is a barrier to migration during most of the year. It is likely that some adult fish are able to migrate as far as the Gist Road culvert during periods of high water, but that spawning conditions are poor.

### 2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402.02 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations and when appropriate combines them with the Habitat Approach (NOAA Fisheries 1999): (1) Consider the biological requirements of the listed species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; and (4) determine whether the

species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the effects of the environmental baseline, and any cumulative effects, and considering measures for survival and recovery specific to other life stages. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species

The fourth step above requires a two-part analysis. The first part focuses on the action area and defines the proposed action's effects in terms of the species' biological requirements in that area (*i.e.*, effects on essential habitat features). The second part focuses on the species itself. It describes the action's effects on individual fish, or populations, or both, and places these effects in the context of the ESU as a whole. Ultimately, the analysis seeks to answer the question of whether the proposed action is likely to jeopardize a listed species' continued existence. If so, step 5 is the identification by NOAA Fisheries of possible reasonable and prudent alternatives for the action that avoid jeopardy.

### **2.1.3 Biological Requirements**

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution, and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The biological requirements are population characteristics necessary for OC coho salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For actions that affect freshwater habitat, NOAA Fisheries usually describes the habitat portion of a species' biological requirements in terms of a concept called properly functioning condition (PFC). PFC is defined as the sustained presence of natural, habitat-forming processes in a watershed that are necessary for the long-term survival of the species through the full range of environmental variation (NOAA Fisheries 1999). PFC, then, constitutes the habitat component of a species' biological requirements. OC coho salmon survival in the wild depends upon the proper functioning of ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse effects of current practices. For this consultation, the biological requirements are improved habitat characteristics that would function to support successful adult migration, holding, and spawning; and juvenile rearing, upstream and downstream migration, and smoltification.

Essential habitat features for juvenile rearing (growth and development) areas include adequate water quality, water quantity, water velocity, cover and shelter, dietary and spatial resources, riparian vegetation, and safe passage to upstream and downstream habitats. Essential habitat features for juvenile migration corridors include adequate water quality, water quantity, water velocity, cover and shelter, dietary resources, riparian vegetation and space. Essential habitat features for adult migration corridors include adequate water quality, water quantity, water velocity, cover and shelter, riparian vegetation and space.

#### **2.1.4 Environmental Baseline**

In step two of NOAA Fisheries' analysis, the relevance of the environmental baseline in the action area is evaluated. Regulations implementing section 7 of the ESA (50 CFR 402.02) define the environmental baseline as the past and present effects of all Federal, state, or private actions and other human activities in the action area. The environmental baseline also includes the anticipated effects of all proposed Federal projects in the action area that have undergone section 7 consultation, and the effects of state and private actions that are contemporaneous with the consultation in progress.

Land uses in the action area are primarily agricultural, with any residential use associated with cattle-raising and other farming activities. Riparian areas and stream channels in the action area have been damaged by activities related to these land uses throughout the watershed (FEMAT 1993, Botkin *et al.* 1995, OCSRI 1997). Habitat changes that have contributed to the decline of OC coho in the action area include: (1) Reduced biological, chemical, and physical connectivity between streams, riparian areas, floodplains, and uplands; (2) elevated fine sediment yields; (3) reduced instream large woody debris; (4) loss or degradation of riparian vegetation; (5) altered stream channel morphology; (6) altered base and peak stream flows; and (7) fish passage impediments.

NOAA Fisheries concludes that not all of the biological requirements of the listed species within the action area are being met under current conditions. Based on the best available information on the status of OC coho salmon, including population status, trends, and genetics, and the environmental baseline conditions within the action area, significant improvement in habitat conditions is needed to meet the biological requirements of OC coho salmon for survival and recovery.

#### **2.1.5 Analysis of Effects**

In step three of NOAA Fisheries' jeopardy analysis, the effects of proposed actions on listed species are evaluated, and the biologist provides an opinion about whether the species can be expected to survive with an adequate potential for recovery if those actions go forward.

### **2.1.5.1 Effects of the Proposed Action**

#### Physical Habitat Alteration

The effects of the two culverts, as currently functioning, on physical habitat features include modification of creek bottom topography with resultant changes in water circulation patterns and the accumulation of sediment and pollutants in the water column as the creek flows through the Gleason property.

The elimination of a scour pool at the base of the Gist Road culvert, and the re-creation of fish passage at this point, will open up approximately 1.5 miles of habitat upstream of the culvert. At the Gleason property culvert, the construction of a larger, arched culvert will replace two, 2-foot diameter pipes that are currently blocked. This will shift the flow of the creek from a wide wash across the pasture, to a more defined channel. This will directly affect the water quality by reducing the amount of pollutants that are now accumulating in the stream from cattle waste.

When the culverts are replaced, the new culverts and associated channel-spanning weirs will cause direct effects to the streambed, primarily with an increased number of small, passable pools; will improve water quality by lowering levels of sediment and pollutants in the water column; and will cause a temporary loss of riparian habitat when the sites are cleared for construction.

In the short term, riparian habitat will be removed, and water temperatures in the vicinity of the Gist Road culvert may temporarily elevate due to reduction in shade from the removal of Himalayan blackberry vegetation. This area will be reseeded with native vegetation and will, in the long term, restore that section of the creek to naturally-functioning conditions.

None of the effects that will result from construction of the culverts is expected to cause a long-term loss of habitat but are, rather, expected to result in flow, water quality, and stream channel improvements that will benefit salmonids.

#### Water Quality–Turbidity

Increased suspended sediments from construction can adversely affect salmonid fishes. The size of the sediment particles and flow velocities typically affect the duration of sediment suspension in the water column. Larger particles (> 2 millimeters), such as sand and gravel, settle rapidly, but silt and very fine sediment may be suspended for several hours. Suspended sediments can adversely affect salmonid migratory and social behavior and foraging opportunities (Bisson and Bilby 1982; Sigler *et al.* 1984; Berg and Northcote 1985).

Turbidity is defined as a measurement of relative clarity due to an increase in dissolved or suspended, undissolved particles (measured as total suspended sediment, or TSS). At moderate levels, turbidity can reduce primary and secondary productivity and, at high levels, has the potential to interfere with feeding and to injure and kill adult and juvenile fish (Spence *et al.* 1996, Bjornn and Reiser 1991). Servizi (1988) observed an increase in sensitive biochemical stress indicators and an increase in gill flaring when salmonids were exposed to highly turbid

water (gill flaring allows the fish to create sudden changes in buccal cavity pressure, which acts similar to a cough). Salmonid fishes may move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984, Lloyd 1987, Servizi and Martens 1991). Juvenile salmonid fishes tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, except when the fish must traverse these streams along migration routes (Lloyd *et al.* 1987). A potential positive effect of increased turbidity is providing refuge and cover from predation. Fish that remain in turbid waters experience a reduction in predation from piscivorous fish and birds (Gregory and Levings 1998). In habitats with intense predation pressure, this provides a beneficial trade-off of enhanced survival in exchange for physical effects such as reduced growth.

Exposure duration is a critical determinant of the occurrence and magnitude of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonid fishes have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with floods, and are adapted to such exposures. Adult and larger juvenile salmonid fishes appear to be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjornn and Reiser 1991). However, chronic exposure can cause physiological stress that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

Increases in TSS can adversely affect filter-feeding macroinvertebrates and fish feeding. At concentrations of 53 to 92 parts per million (ppm) (24 hours exposure) macroinvertebrate populations were reduced (Gammon 1970). Concentrations of 250 ppm (1 hour) caused a 95% reduction in feeding rates in juvenile coho salmon (Noggle 1978). Concentrations of 1200 ppm (96 hours) killed juvenile coho salmon (Noggle 1978). Concentrations of 53.5 ppm (12 hours) caused physiological stress and changes in behavior in coho salmon (Berg 1983).

The proposed construction is likely to temporarily increase turbidity downstream of the work area during and after construction for a total of approximately 7 to 10 hours per in-water construction activity. These temporary increases in turbidity are not likely to physiologically stress and displace adults, since the work will take place during periods when adults are not present (*i.e.*, during the in-water work window). Rearing juvenile salmon may be present, but construction is proposed to occur only during the summer in-water work window, when juvenile abundance is likely low. Due to the measures to isolate the work from the creek flow, NOAA Fisheries does not expect serious levels of mortality in the juvenile salmonid population.

#### Water Quality–Dissolved Oxygen

Fine sediments produced by construction would likely create a sediment plume that may not disperse rapidly. Decreases in dissolved oxygen have been shown to adversely affect swimming performance in salmonid fishes (Bjornn and Reiser 1991). NOAA Fisheries expects only minor effects on dissolved oxygen concentrations due to the limited construction activity that is proposed, and because in-water work will be isolated from the stream flow.

### Effects to Benthic Prey Resources

Construction physically disturbs channel bottoms, eliminating or displacing established benthic communities, and reducing prey availability to coho salmon. Construction may also suppress the ability of some benthic species to re-colonize the altered area, thus creating a loss of benthic diversity and food sources for the prey species of coho salmon. This may increase OC coho salmon intraspecific aggression, displace them from preferred rearing habitat, and reduce production of juveniles to the smolt stage. Due to the limited and temporary nature of the proposed construction events, NOAA Fisheries does not expect long-term effects on benthic invertebrates.

### Construction Equipment

Operation of heavy equipment requires the use of fuel, lubricants, coolants, and other petroleum products, which if spilled into a waterbody, could injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain harmful polycyclic aromatic hydrocarbons. The proposed action includes a spill containment and control plan. Because the construction will take place over a period of two months, and the replaced culverts are expected to last at least 20 years, any pollution from the use of machinery is expected to be temporary and short-lived.

#### **2.1.5.2 Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation”.

Except for a TEP program to improve downstream riparian habitat in the Smith Creek watershed, NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater effects to listed species than presently occurs. The action area consists of private lands. Land use on these non-federal lands is residential and agricultural.

Between 1990 and 2000, the population of Tillamook County increased by 12.5%.<sup>1</sup> Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the state continues to grow, demand for actions similar to the subject project likely will continue to increase as well. Each subsequent action may have only a small incremental effect, but taken together they may have a significant effect that would further degrade the watershed’s environmental baseline and undermine the improvements in habitat conditions necessary for listed species to survive and recover.

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<sup>1</sup> U.S. Census Bureau, State and County Quickfacts, Coos County, Oregon. Available at <http://quickfacts.census.gov/qfd/states/41/41057.html>

### **2.1.6 Conclusion**

After reviewing the best available scientific and commercial information available regarding the current status of the OC coho salmon ESU, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, NOAA Fisheries concludes that the action, as proposed, is not likely to jeopardize the continued existence of OC coho salmon.

Our conclusion is based on the following considerations: (1) All in-water work will occur at a time of year when abundance of adult and juvenile OC coho salmon is low; (2) all in-water work would occur for no more than approximately 10 hours per day, for no longer than 60 days; (3) potential increases in turbidity and reductions in dissolved oxygen will be short-lived; (4) all in-water work will be isolated from the creek flow and erosion control measures will be in place throughout the construction period; and (5) the effects of this action are not likely to impair currently properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

### **2.1.7 Reinitiation of Consultation**

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending conclusion of the reinitiated consultation.

## **2.2 Incidental Take Statement**

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” [16 USC 1532(19)] Harm is defined by regulation as “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering.” [50 CFR 222.102] Harass is defined as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.” [50 CFR 17.3] Incidental take is defined as “takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant.” [50 CFR 402.02] The ESA at section 7(o)(2) removes the

prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

### **2.2.1 Amount or Extent of Take**

The proposed action covered by this Opinion is reasonably certain to result in incidental take of listed species due to temporary changes in water quality and riparian habitat, and by a temporary reduction in benthic prey resources. Effects of actions such as these are largely unquantifiable in the short term, but are likely to be largely limited to harm in the form of injury and behavior modification. The take that may occur as a result of the proposed project is limited to take of juvenile coho.

Therefore, even though NOAA Fisheries expects some low level of incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable it to estimate a specific amount of incidental take. In instances such as this, NOAA Fisheries designates the expected level of take in terms of the extent of take allowed. Therefore, the extent of take for this Opinion is limited to take resulting from activities undertaken as described in this Opinion that occur in the action area, which includes all habitats accessible to OC coho salmon from 300 feet upstream of the Gist Road culvert, to 300 feet downstream of the Gleason property culvert, including the 100-year floodplain. Incidental take occurring due to modifications to the proposed action or beyond the area described is not authorized by this consultation.

### **2.2.2 Reasonable and Prudent Measures**

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The Corps has the continuing duty to regulate the activities covered in this incidental take statement. If the Corps fails to require the permittees to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. NOAA Fisheries believes that activities carried out in a manner consistent with these reasonable and prudent measures, except those otherwise identified as exclusions, will not necessitate further site-specific consultation. Activities which do not comply with all relevant reasonable and prudent measures will require individual consultation.

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize the amount or extent of take of listed fish resulting from implementation of this Opinion. These reasonable and prudent measures would also avoid or minimize adverse effects to designated critical habitat.



The Corps shall:

1. Ensure completion of a comprehensive monitoring and reporting program to confirm this Opinion is meeting its objective of minimizing take from permitted activities.
2. Avoid or minimize incidental take from construction effects to water quality and physical habitat alteration by applying permit conditions that require that habitat restoration design and completion of construction is carried out with minimum harm to aquatic and riparian systems.

### **2.2.3 Terms and Conditions**

To be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary and are applicable to more than one category of activity. Therefore, terms and conditions listed for one type of activity are also terms and conditions of any category in which they would also minimize take of listed species or their habitats.

1. To implement reasonable and prudent measure #1 (monitoring), the Corps shall ensure that:
  - a. Salvage notice. The following notice is included as a permit condition.

NOTICE. If a sick, injured or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at 360.418.4246. The finder must take care in handling of sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.
  - b. Written planning requirements. Before beginning any work below bankfull elevation,<sup>2</sup> the permittee will provide a copy of the written plans for site restoration and pollution and erosion control, to the Oregon State Habitat Office of NOAA Fisheries at the following address. Plan requirements are described below.

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<sup>2</sup> 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

Director, Oregon State Habitat Office  
Habitat Conservation Division  
National Marine Fisheries Service  
**Attn: 2003/01356 or 2003/01200**  
525 NE Oregon Street  
Portland, OR 97232

- c. Implementation monitoring report required. The permittee submits an implementation monitoring report to the Corps and to NOAA Fisheries, at the address below, within 120 days of completing all in-water work. The monitoring report will describe the permittee's success meeting his or her permit conditions.
  - i. If the in-water work will not be completed by January 31 following the year during which consultation was completed, the permittee shall submit a report to the Corps and to NOAA Fisheries by January 31 saying why the in-water work was not complete.
  - ii. If the monitoring report or explanation of why work was not completed is not received by the Corps and NOAA Fisheries by January 31, NOAA Fisheries may consider that a modification of the action that causes an effect on listed species not previously considered and causes the incidental take statement of the Opinion to expire.
  - iii. Submit a copy of the monitoring report or explanation of why work was not completed to the Oregon Office of NOAA Fisheries, at the address above.
- d. Implementation monitoring report contents. Each monitoring report will include the following information.
  - i. Project identification
    - (1) Permittee name, permit number, and project name.
    - (2) Project location by 5<sup>th</sup> field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map.
    - (3) Corps contact person.
    - (4) Starting and ending dates for work completed.
  - ii. Habitat conditions. Photos of habitat conditions at the project and any compensation site or sites, before, during, and after project completion.<sup>3</sup>
    - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
    - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
  - iii. Project data.
    - (1) Work cessation. Dates work ceased due to high flows, if any.

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<sup>3</sup> Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

- (2) Pollution control. A summary of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
    - (3) Site preparation.
      - (a) Total cleared area – riparian and upland.
      - (b) Total new impervious area.
    - (4) Isolation of in-water work area, capture and release.
      - (a) Supervisory fish biologist – name and address.
      - (b) Methods of work area isolation and take minimization.
      - (c) Stream conditions before, during and within one week after completion of work area isolation.
      - (d) Means of fish capture.
      - (e) Number of fish captured by species.
      - (f) Release site and condition of all fish released.
      - (g) Any incidence of observed injury or mortality of listed species.
    - (5) Streambank protection.
      - (a) Type and amount of materials used.
      - (b) Project size
        - (i) one bank or both
        - (ii) width
        - (iii) linear feet.
  - e. Report on fish presence and benthic prey resources. In addition to the 120-day implementation report, the permittee will submit a report to the Corps and NOAA Fisheries by December 31 that includes the date of each visit to the project site, site conditions on that date, and any data collected on that date, which shall include information about fish presence/ absence and benthic resources. Culvert function will be assessed annually; fish presence and benthic resources will be assessed using ODFW standard survey protocols for this reach at the schedule that has been established (1-3 years).
  - f. Reinitiation contact. To reinitiate consultation, contact the Oregon State Habitat Office of NOAA Fisheries, at the address above.
2. To implement reasonable and prudent measure #2 (construction-related activities), the Corps shall:
- a. Site restoration. Ensure that the permittee prepares and carries out a written site restoration plan as necessary to ensure that all streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows. Submit a copy of the written site restoration plan to the Corps and to the Oregon State Habitat Office of NOAA Fisheries, at the address above, before beginning work below bankfull elevation.
    - i. General considerations.

- (1) Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (*e.g.*, large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.
  - (2) Streambank shaping. Restore damaged streambanks to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation, unless precluded by pre-project conditions (*e.g.*, a natural rock wall).
  - (3) Revegetation. Replant each area requiring revegetation before the first April 15 following construction. Use a diverse assemblage of species native to the project area or region, including grasses, forbs, shrubs and trees. Noxious or invasive species may not be used.
  - (4) Pesticides. Take of ESA-listed species caused by any aspect of pesticide use is not included in the exemption to the ESA take prohibitions provided by this incidental take statement. Pesticide use must be evaluated in an individual consultation, although mechanical or other methods may be used to control weeds and unwanted vegetation.
  - (5) Fertilizer. Do not apply surface fertilizer within 50 feet of any stream channel.
  - (6) Fencing. Install fencing as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
- ii. Plan contents. Include each of the following elements.
- (1) Responsible party. The name and address of the party(s) responsible for meeting each component of the site restoration requirements, including providing and managing any financial assurances and monitoring necessary to ensure restoration success.
  - (2) Baseline information. This information may be obtained from existing sources (*e.g.*, land use plans, watershed analyses, subbasin plans), where available.
    - (a) A functional assessment of adverse effects, *i.e.*, the location, extent and function of the riparian and aquatic resources that will be adversely affected by construction and operation of the project.
    - (b) The location and extent of resources surrounding the restoration site, including historic and existing conditions.
  - (3) Goals and objectives. Restoration goals and objectives that describe the extent of site restoration necessary to offset adverse effects of the project, by aquatic resource type.
  - (4) Performance standards. Use these standards to help design the site restoration plan and to assess whether the restoration goal is met. While no single criterion is sufficient to measure success, the

intent is that these features should be present within reasonable limits of natural and management variation.

- (a) Bare soil spaces are small and well dispersed.
  - (b) Soil movement, such as active rills or gullies and soil deposition around plants or in small basins, is absent or slight and local.
  - (c) If areas with past erosion are present, they are completely stabilized and healed.
  - (d) Plant litter is well-distributed and effective in protecting the soil with few or no litter dams present.
  - (e) Native woody and herbaceous vegetation, and germination microsites, are present and well distributed across the site.
  - (f) Vegetation structure is resulting in rooting throughout the available soil profile.
  - (g) Plants have normal, vigorous growth form, and a high probability of remaining vigorous, healthy and dominant over undesired competing vegetation.
  - (h) High impact conditions confined to small areas necessary access or other special management situations.
  - (i) Streambanks have less than 5% exposed soils with margins anchored by deeply rooted vegetation or coarse-grained alluvial debris.
  - (j) Few upland plants are in valley bottom locations, and a continuous corridor of shrubs and trees provide shade for the entire streambank.
- (5) Work plan. Include a written work plan as part of the site restoration plan with sufficient detail to include a description of the following elements, as applicable.
- (a) Boundaries for the restoration area.
  - (b) Restoration methods, timing, and sequence.
  - (c) Water supply source, if necessary.
  - (d) Woody native vegetation appropriate to the restoration site.<sup>4</sup> This must be a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees. This may include allowances for natural regeneration from an existing seed bank or planting.
  - (e) A plan to control exotic invasive vegetation.
  - (f) Elevation(s) and slope(s) of the restoration area to ensure they conform with required elevation and hydrologic requirements of target plant species.

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<sup>4</sup> Use references sites to select vegetation for the mitigation site whenever feasible. Historic reconstruction, vegetation models, or other ecologically-based methods may also be used as appropriate.

- (g) Geomorphology and habitat features of stream or other open water.
  - (h) Site management and maintenance requirements.
- (6) Five-year monitoring and maintenance plan.
  - (a) A written schedule to visit the restoration site annually for five years or longer as necessary to confirm that the performance standards are achieved. Despite the initial five-year planning period, site visits and monitoring will continue from year-to-year until the Corps certifies that site restoration performance standards have been met.
  - (b) During each visit, inspect for and correct any factors that may prevent attainment of performance standards (*e.g.*, low plant survival, invasive species, wildlife damage, drought).
  - (c) Keep a written record to document the date of each visit, site conditions and any corrective actions taken.
- b. Timing of in-water work. Complete all work below the bankfull elevation between, July 1 and September 15, unless otherwise approved in writing by NOAA Fisheries.
- c. Cessation of work. Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
- d. Fish screens. Install, operate and maintain a fish screen according to NOAA Fisheries' fish screen criteria<sup>5</sup> on each water intake used for project construction, including pumps used to isolate an in-water work area. Screens for water diversions or intakes that will be used for irrigation, municipal or industrial purposes, or any use besides project construction are not authorized.
- e. Pollution and Erosion Control Plan. Prepare and carry out a written pollution and erosion control plan to prevent pollution caused by surveying or construction operations. Submit a copy of the written plan to the Corps and to the Oregon Office of NOAA Fisheries, at the address above, before beginning work below bankfull elevation.
  - i. Plan Contents. The pollution and erosion control plan will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
    - (1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
    - (2) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage

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<sup>5</sup> National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (<http://www.nwr.noaa.gov/1hydroweb/ferc.htm>).

- sites, fueling operations, staging areas, and roads being decommissioned.
- (3) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.
  - (4) A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
  - (5) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
  - (6) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.
- ii. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.<sup>6</sup>
    - (1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.
    - (2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.
- f. Construction discharge water. Treat all discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows.
- i. Water quality. Design, build and maintain facilities to collect and treat all construction discharge water, including any contaminated water produced by drilling, using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
  - ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.
  - iii. Pollutants. Do not allow pollutants including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours to contact any wetland or the two-year floodplain.

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<sup>6</sup> 'Working adequately' means that project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream of the turbidity causing activity.

- g. Preconstruction activity. Complete the following actions before significant<sup>7</sup> alteration of the project area.
- i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
  - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.
    - (1) A supply of sediment control materials (*e.g.*, silt fence, straw bales<sup>8</sup>).
    - (2) An oil-absorbing, floating boom whenever surface water is present.
  - iii. Temporary erosion controls. All temporary erosion controls will be in place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.
- h. Heavy Equipment. Restrict use of heavy equipment as follows:
- i. Choice of equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally-sized, low ground pressure equipment).
  - ii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain and store vehicles as follows:
    - (1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.
    - (2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland, unless otherwise approved in writing by NOAA Fisheries.
    - (3) Inspect all vehicles operated within 150 feet of any stream, waterbody or wetland daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by Corps or NOAA Fisheries.
    - (4) Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below bankfull elevation until all visible external oil, grease, mud, and other visible contaminants are removed.
    - (5) Diaper all stationary power equipment (*e.g.*, generators, cranes, stationary drilling equipment) operated within 150 feet of any

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<sup>7</sup> 'Significant' means an effect can be meaningfully measured, detected or evaluated.

<sup>8</sup> When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.



stream, waterbody or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

- i. Site preparation. Conserve native materials for site restoration.
  - i. If possible, leave native materials where they are found.
  - ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.
  - iii. Stockpile any large wood<sup>9</sup>, native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.
- j. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, or if the work area is 300 feet upstream of spawning habitats, completely isolate the work area from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials, unless otherwise approved in writing by NOAA Fisheries.
- k. Capture and release. Before and intermittently during pumping to isolate an in-water work area, attempt to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.
  - i. The entire capture and release operation must be conducted or supervised by a fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish.
  - ii. Do not use electrofishing if water temperatures exceed 18°C.
  - iii. If electrofishing equipment is used to capture fish, comply with NOAA Fisheries' electrofishing guidelines.<sup>10</sup>
  - iv. Handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
  - v. Transport fish in aerated buckets or tanks.
  - vi. Release fish into a safe release site as quickly as possible, and as near as possible to capture sites.
  - vii. Do not transfer ESA-listed fish to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.
  - viii. Obtain all other Federal, state, and local permits necessary to conduct the capture and release activity.

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<sup>9</sup> For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 ([www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc](http://www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc)).

<sup>10</sup> National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf>).

- ix. Allow NOAA Fisheries or its designated representative to accompany the capture team during the capture and release activity, and to inspect the team's capture and release records and facilities.
- l. Streambank protection goal. The goal of streambank protection authorized by this Opinion is to avoid and minimize adverse affects to natural stream and floodplain function by limiting actions to those that are not expected to have long-term adverse effects on aquatic habitats.<sup>11</sup>
- m. Use of large wood and rock. Whenever possible, use large wood as an integral component of all streambank protection treatments.<sup>12</sup> Avoid or minimize the use of rock, stone and similar materials. Large wood will be intact, hard, and undecayed to partly decaying with untrimmed root wads to provide functional refugia habitat for fish. Use of decayed or fragmented wood found laying on the ground or partially sunken in the ground is not acceptable.

### 3. MAGNUSON-STEVENSON ACT

#### 3.1 Background

Pursuant to the MSA:

- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: “Waters”

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<sup>11</sup> For guidance on how to evaluate streambank failure mechanisms, streambank protection measures presented here, and use of an ecological approach to management of eroding streambanks, see, e.g., Washington Department of Fish and Wildlife, Washington Department of Transportation, and Washington Department of Ecology, *Integrated Streambank Protection Guidelines*, various pagination (April 2003) (<http://www.wa.gov/wdfw/hab/ahg/ispdoc.htm>), and Federal Interagency Stream Restoration Working Group, *Stream Corridor Restoration: Principles, Processes, and Practices*, various pagination (October, 1998) ([http://www.usda.gov/stream\\_restoration/](http://www.usda.gov/stream_restoration/)).

<sup>12</sup> See, e.g., Washington Department of Fish and Wildlife, Washington Department of Transportation, and Washington Department of Ecology, *Integrated Streambank Protection Guidelines*, Appendix I: Anchoring and placement of large woody debris (April 2003) (<http://www.wa.gov/wdfw/hab/ahg/ispdoc.htm>); Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (<http://www.odf.state.or.us/FP/RefLibrary/RefsList.htm>).

include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects on EFH.

### **3.2 Identification of EFH**

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: Chinook (*O. tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other waterbodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). EEH also has been designated for groundfish species and coastal pelagic species. The estuarine EFH composite includes those waters, substrates and associated biological communities within bays and estuaries of the EEZ, from mean higher high water level (MHHW) or extent of upriver saltwater intrusion to the respective outer boundaries for each bay or estuary as defined in 33 CFR 80.1 (Coast Guard lines of demarcation). Detailed descriptions and identifications of EFH are contained in the fishery management plans for groundfish (PFMC 1999), coastal pelagic species (PFMC 1999a), and Pacific salmon (PFMC 1999b). Casillas *et al.* (1998) provides additional detail on the groundfish EFH habitat complexes.

### **3.3 Proposed Action**

The proposed action is detailed above in section 1.2 of this document. For this consultation, the action area includes all riverine habitats accessible to OC coho salmon from 300 feet upstream of the Gist Road culvert, to 300 feet downstream of the Gleason property culvert. This area has been designated as EFH for chinook and coho salmon.

### **3.4 Effects of Proposed Action**

The proposed action will adversely affect migration habitat of adult salmon, rearing and migration habitat for juvenile salmon, benthic prey resources, and water quality for chinook and coho salmon.

### **3.5 Conclusion**

The proposed action will adversely affect the EFH for chinook and coho salmon in the action area.

### **3.6 EFH Conservation Recommendations**

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. NOAA Fisheries recommends the Corps implement the conservation recommendations and terms and conditions in the ESA consultation.

### **3.7 Statutory Response Requirement**

Please note that the MSA (section 305(b)) and 50 CFR 600.920G) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse effects of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

### **3.8 Supplemental Consultation**

The Corps must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

#### 4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

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